# *MATHEMATICS*
## *Third Grade*

**NUMBER AND OPERATIONS**

*The student will identify, represent, order, and compare numbers and compute and solve problems.*

| Key | Reporting Category | | |
|---|---|---|---|
| **A** | **N** | Count by 10's, 100's, or 1,000's. | |
| **D** | | Skip count by 10's from any whole number less than 1,000. | |
| **D** | | Read and write whole numbers to 9,999. | |
| **A** | **N** | Represent whole numbers to 9,999 with models. | |
| **A** | **N** | Identify whole numbers as odd or even. | |
| **A** | **N** | Identify the place value of a given digit up to thousands. | |
| **A** | **N** | Represent whole numbers up to 10,000 in expanded form (e.g., 1,000's + 100's + 10's + 1's). | |
| **D** | | Connect the spoken or written word names and concrete or pictorial representations (regions or sets) of fractions with denominators up to ten. | |
| **A** | **N** | Connect written and pictorial representations of fractions with denominators up to ten. | |
| **A** | **N** | Compare fractions with numerators of 1 and denominators up to 10. | |
| **I** | | Compare and order decimal amounts written as money. | |
| **A** | **R** | Recognize the value of combinations of coins and bills up to $5. | |
| **A** | **R** | Determine the correct change from a transaction that is less than $1.00. | |
| **D** | | Order and sequence whole numbers up to 4 digits. | |
| **A** | **N** | Compare and order whole numbers up to 9999 using the appropriate symbol (i.e., <, >, and =). | |
| **I** | | Relate skip counting to multiplication. | |
| **I** | | Connect division to sharing situations. | |
| **I/D** | | Demonstrate multiplication using repeated addition (e.g., arrays). | |
| **D** | | Write and identify number sentences that describe situations involving addition, subtraction, and multiplication. | |
| **D** | | Write and explain related addition and subtraction sentences. | |
| **A** | **R** | Solve real-world problems using addition or subtraction of whole numbers. | |
| **A** | **C** | Add and subtract efficiently and accurately with single-digit whole numbers. | |
| **A** | **C** | Add efficiently and accurately with two- and/or three-digit whole numbers. | |
| **A** | **C** | Subtract efficiently and accurately with two- and/or three-digit whole numbers. | |
| **D** | | Use a variety of thinking strategies to add and subtract whole numbers (e.g., sums of ten, doubles plus one). | |
| **D** | | Explain the reasonableness of a solution to a computation or to a word problem. | |
| **A** | **N** | Use estimation to select a reasonable solution in problem solving (addition | |

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| | | | |
|---|---|---|---|
| | | and subtraction only). | |
| **I** | | Relate adding doubles to multiplying by two. | |
| **I** | | Use known multiplication facts to determine a related product (e.g., 9 x 7 is 7 less than 10 x 7). | |
| **A** | **C** | Use the multiplication facts 0, 1, 2, 5, and 10 efficiently and accurately. | |
| **D** | | Explain and justify solution strategies used in problem solving. | |
| **D** | | Select and use an appropriate strategy to solve word problems (e.g., organized list, guess and check, diagram, and table). | |
| **I** | | Mentally calculate the sum or difference of any two numbers up to 100. | |
| **D** | | Use strategies, including rounding, to estimate in story problems. | |

**ALGEBRA**

*The student will sort and classify objects; create, extend, and describe patterns; and represent number sentences with words, objects, and pictures.*

| | | | |
|---|---|---|---|
| **A** | **AT** | Sort objects by two attributes. | |
| **D** | | Sort objects by two or more attributes. | |
| **M** | | Devise, carry out, and explain how a group of objects has been sorted. | |
| **A** | **AT** | Identify the rules by which objects or numbers have been sorted. | |
| **D** | | Recognize, describe, complete, translate, or create patterns of figures or numbers. | |
| **A** | **AT** | Extend repeating and growing numerical or geometric patterns. | |
| **A** | **AT** | Represent repeating geometric patterns as repeating numerical patterns. | |
| **D** | | Describe a growing pattern, involving objects, shapes, or numbers. | |
| **A** | **AT** | Determine the output number for a particular input number given a one-operation function rule involving addition or subtraction. | |
| **D** | | Demonstrate knowledge (with words or symbols) of the commutative properties of addition and multiplication. | |
| **D** | | Show or represent and solve open sentences, involving addition, subtraction, and multiplication, with concrete objects or pictures. | |
| **A** | **AT** | Solve open sentences that involve addition and subtraction of whole numbers zero to twenty. | |
| **A** | **AT** | Connect open sentences to real-world situations. | |
| **D** | | Demonstrate knowledge and understanding of grade level mathematical terms. | |
| **I** | | Demonstrate understanding that an equation is a number sentence stating two quantities are equal. | |
| **D** | | Use the commutative property of addition and multiplication. | |
| **D** | | Show that subtraction is not commutative. | |
| **M** | | Apply the addition and subtraction properties of 0 (adding or subtracting 0 doesn't change a number). | |
| **I** | | Apply the zero and identity properties of multiplication (adding 0 or multiplying by 1 doesn't change a number). | |
| **I** | | Use arrays to represent the commutative property of multiplication. | |
| **D** | | Describe qualitative change (e.g., a student growing taller). | |
| **D** | | Describe quantitative change (e.g., a student growing two inches in one year). | |

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**GEOMETRY**

*The student will identify, describe, and create basic shapes and describe relative positions and directions.*

| | | | |
|---|---|---|---|
| **D** | | Identify, build, draw, and compare two- and three-dimensional geometric figures (e.g. rectangle, square, triangle, circle, cube, cylinder, sphere, and cone). | |
| **A** | **G** | Name two-dimensional geometric figures (e.g., rectangle, square, triangle, circle, cube, cylinder, sphere, and cone). | |
| **A** | **G** | Name three-dimensional geometric figures (e.g., rectangle, square, triangle, circle, cube, cylinder, sphere, and cone). | |
| **A** | **G** | Recognize geometric figures that are the same size and shape. | |
| **A** | **G** | Identify the line of symmetry in a two-dimensional design or shape. | |
| **D** | | Draw lines of symmetry in two-dimensional designs and shape. | |
| **I** | | Identify and draw horizontal and vertical lines. | |
| **I** | | Identify and draw diagonals of polygons. | |
| **D** | | Identify the position of 1/2, 1/3, or 1/4 on the number line. | |
| **I** | | Identify a location on a grid using whole number coordinates. | |
| **A** | **AT** | Use appropriate mathematical language to find a point on a grid using whole number coordinates. | |
| **D** | | Predict and identify the results of sliding, flipping, or turning two-dimensional shapes. | |
| **A** | **G** | Identify the result of a transformation that has been applied to a simple two-dimensional geometric shape (i.e., flips or slides). | |

**MEASUREMENT**

*The student will apply measurement concepts of time, length, weight, capacity, and temperature***.**

| | | | |
|---|---|---|---|
| **D** | | Determine when an estimate of a measurement is sufficient. | |
| **D** | | Demonstrate understanding of the concepts of perimeter, area, and capacity. | |
| **A** | **R** | Solve real-world problems using a calendar. | |
| **A** | **R** | Solve real-world problems involving addition and subtraction of one- or two-digit measurements. | |
| **D** | | Use strategies to estimate or determine length, perimeter, area, capacity, weight, time, and temperature. | |
| **A** | **ME** | Use estimation to determine if a length measurement is reasonable. | Too Close for Comfort, p.W300 |
| **D** | | Explain the relationships among inches, feet, and yards. | |
| **D** | | Measure to the nearest centimeter, foot, half-inch, and inch. | |
| **A** | **ME** | Measure length to the nearest centimeter and inch. | |
| **D** | | Measure to the nearest liter, cup, pint, quart, and gallon. | |
| **D** | | Measure to the nearest ounce, pound, kilogram, and gram. | |
| **D** | | Find the perimeter of polygons. | |
| **A** | **ME** | Find the perimeter of a rectangle on a grid. | |
| **D** | | Select and apply the most appropriate standard units of length, area, capacity, weight, time, and temperature. | |
| **A** | **ME** | Select an appropriate standard unit to measure length. | Too Close for Comfort, p.W300 |

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| | | | |
|---|---|---|---|
| **D** | | Solve real-world problems involving measurement. | Too Close for Comfort, p.W300 |
| **A** | **R** | Solve real-world problems involving elapsed time to the half-hour. | |
| **A** | **ME** | Read thermometers with Fahrenheit and Celsius scales (positive whole number temperatures). | |
| **A** | **ME** | Read and write time at five-minute intervals. | |
| **A** | **ME** | Read and write time to the nearest hour, half-hour, and quarter-hour. | |

**DATA ANALYSIS AND PROBABILITY**

*The student will make simple graphs using concrete objects and pictures and describe events as likely or unlikely.*

| | | | |
|---|---|---|---|
| **D** | | Write questions and gather data to answer questions. | |
| **D** | | Interpret and construct tables using tally marks. | Graphananimal, p.W49 |
| **D** | | Construct pictographs and bar graphs. | Graphananimal, p.W49<br>Plastic Jellyfish, p.AW128 |
| **A** | **DP** | Interpret pictographs. | |
| **A** | **DP** | Interpret bar graphs. | Graphananimal, p.W49 |
| **D** | | Read and interpret tables, bar graphs, and pictographs. | Graphananimal, p.W49<br>Plastic Jellyfish, p.AW128 |
| **D** | | Make and justify predictions based on data gathered and displayed. | |
| **D** | | Identify all possible outcomes of a simple experiment (e.g., spinner, coin toss, and number cubes). | |
| **A** | **DP** | Determine whether an event is certain, possible, or impossible. | |
| **A** | **DP** | Determine the most likely, least likely, or equally likely outcomes in simple experiments (i.e., spinner, number or color cube). | |
| **A** | **DP** | Select all possible outcomes of a simple experiment (i.e., spinner, coin toss, number or color cube). | |
| **A** | **DP** | Solve real-world problems in which data is represented in tables. | |